

DEPARTMENT OF THE ARMY
Wilmington District, Corps of Engineers
Post Office Box 1890
Wilmington, North Carolina 28402-1890

Action ID No. 200420980

December 16, 2004

PUBLIC NOTICE

Wade Williamson, Larry McCauley, and James Wilson of WMW Development, LLC, 3815 Friendship Patterson Mill Road, Burlington, North Carolina, 27215, have applied for a Department of the Army (DA) permit TO PLACE FILL MATERIAL IN 2.17 ACRES OF WETLANDS AND 0.60 ACRES OF LAKE BED, AND THE TEMPORARY DISTURBANCE TO 4.63 ACRES OF LAKE BED THROUGH MECHANIZED LANDCLEARING, LOCATED ADJACENT TO UNNAMED TRIBUTARIES TO BACK CREEK, IN THE CAPE FEAR RIVER BASIN, ASSOCIATED WITH THE CONSTRUCTION OF THE WATERFORD/SEVENTY WEST PROJECT, IN BURLINGTON, ALAMANCE COUNTY, NORTH CAROLINA.

This public notice is being issued after-the-fact. Approximately 1.0 acre of wetland and 570 linear feet of stream channel were impacted by grading and filling activities undertaken by the applicant in May 2004, prior to their submittal of the permit application. Their application proposes to remove 0.64 acre of the unauthorized fill within wetlands, and restore the entire length of stream channel. The remaining 0.36-acre of fill within wetlands is proposed to stay in place and has been accounted for in the impact total. A restoration plan has been included with the plans attached to this public notice. This public notice does not imply, on the part of the Corps of Engineers or other agencies, either a favorable or an unfavorable opinion of the work performed. This notice is issued to solicit comments regarding the factors on which a final decision will be based. Further enforcement action, including possible legal action, has been suspended pending the outcome of this consideration.

The following description of the work is taken from data provided by the applicant and from observations made during a site visit by a representative of the Corps of Engineers. Plans submitted with the application show the proposed reconstruction of an existing dam and the placement of fill material into wetlands associated with stream crossings and lot fill required for the construction of a residential and commercial development within tributaries to Back Creek, located on the south side of US Highway 70, approximately 0.5 mile east of the Guilford – Alamance County Line, in Burlington, Alamance County, North Carolina.

The entire project site is approximately 128 acres in size. As proposed, the development includes a 146-unit single-family residential subdivision, a town home cluster, and an office park. The residential subdivision, known as Waterford, would be located around the existing lake toward the back of the site. The dam for the 16.5-acre lake, which is presently drained, would be reconstructed to existing building codes and standards in its current location, with the normal

pool of the lake remaining at approximately the same elevation, 601.5 feet above sea level. A maximum of 810,000 cubic yards of fill material may be required for reconstruction of the dam, which would have 3:1 side slopes and a top width of 35 feet. The fill required for the dam would be excavated from the lakebed. The primary outlet structure located near the center of the dam would pass under the road to be constructed atop the dam, and would serve as both the principal and emergency spillway. An additional 6-inch drainpipe installed through the dam would provide uninterrupted flows to the stream channel downstream of the lake. The purpose of the proposed lake is to provide a recreational and aesthetic amenity for the subdivision, and is not required to provide stormwater storage or to meet state or local water quality standards. Restoration of the dam would result in the permanent loss of approximately 0.57 acres of lakebed from the placement of fill and would also temporarily impact 4.63 acres of lakebed for excavation of the borrow areas and installation of sediment and erosion control measures.

Subdivision construction would also result in the placement of fill material into 0.36 acre of wetland for lot fill, and clearing and grading of approximately 1.10 acre of fringe wetland located around the edge of the lake. The lot fill would be part of the existing 1.0 acre of fill already placed into wetlands in the location of lots 1-5. Approximately 0.64 acre of the existing fill would be removed, and the area would be restored to wetland. Additionally, 570 linear feet of stream channel that was also filled would be restored using natural channel design as depicted in the attached plans.

All five road crossings required for the development are proposed to be constructed utilizing open-bottom arch culverts that would span the stream beds and avoid stream impacts. However, three of the crossings would impact wetland areas located next to the stream channels. Crossings necessary for the construction of Dunleigh Drive and Faith Leg Drive would impact a total of 0.14 acres of wetland. Additionally, construction of a road across the upper end of the lake to access the town home site would impact 0.57 acre of wetland and 0.03 acre of lakebed. Sewer lines are also proposed to be located in the road corridors and would be bored under the streambeds to avoid disturbing the stream channels.

The total proposed impact associated with the project includes the loss of 2.17 acres of wetlands and 0.60 acre of lakebed, and the temporary disturbance of 4.63 acres of lakebed. Plans showing the work are included with this public notice.

The applicant proposes mitigation for impacts to stream channels associated with the project by providing payment into the North Carolina Wetlands Restoration Program for the restoration of 3.29 acres of riparian wetlands in the Cape Fear River Basin, Cataloging Unit 03030002. The proposed mitigation would be in addition to the restoration of 570 linear feet of stream channel and 0.64 acre of wetlands that have already been disturbed on the site. The applicant also proposes to place deed restrictions on remaining wetlands located in the vicinity of the office park.

The State of North Carolina will review this public notice to determine the need for the applicant to obtain any required State authorization. No Department of the Army (DA) permit will be issued until the coordinated State viewpoint on the proposal has been received and reviewed by this agency, nor will a DA permit be issued until the North Carolina Division of Water Quality (NCDWQ) has determined the applicability of a Water Quality Certificate as required by PL 92-500.

This application is being considered pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). Any person may request, in writing within the comment period specified in the notice, that a public hearing be held to consider this application. Requests for public hearing shall state, with particularity, the reasons for holding a public hearing.

The District Engineer has consulted the latest published version of the National Register of Historic Places for the presence or absence of registered properties, or properties listed as being eligible for inclusion therein. Based on the best available evidence, it has been determined that no sites within the vicinity of the project are registered or listed as being eligible for inclusion in the Register. Examination of the National Register of Historic Places constitutes the extent of cultural resource investigations by the District Engineer, and he is otherwise unaware of the presence of other such resources. Presently, unknown archeological, scientific, prehistorical, or historical data may be lost or destroyed by work under the requested permit.

The District Engineer, based on available information, is not aware that the proposed activity will affect species, or their critical habitat, designated as endangered or threatened pursuant to the Endangered Species Act of 1973.

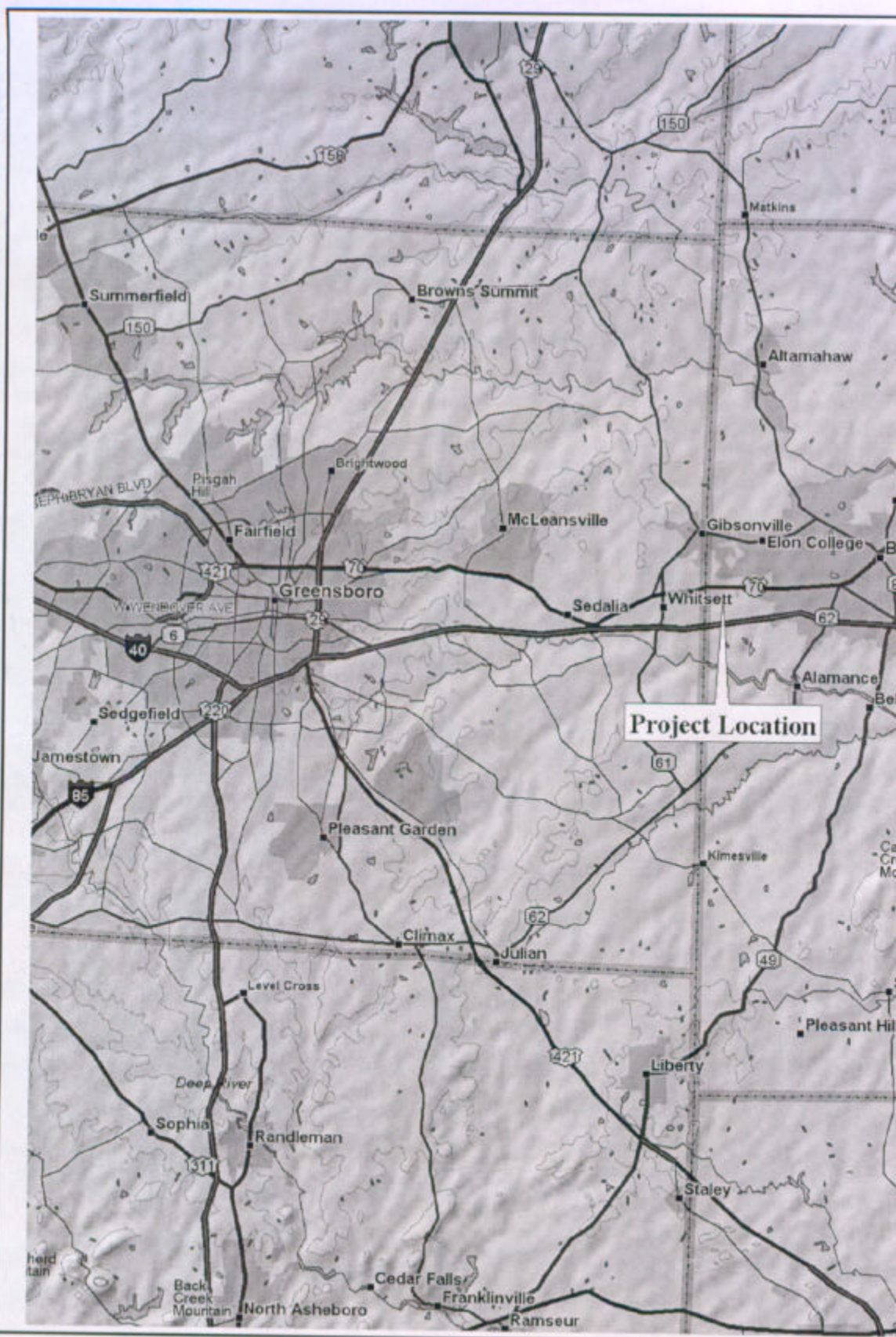
The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts that the proposed activity may have on the public interest requires a careful weighing of all those factors, which become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. That decision should reflect the national concern for both protection and utilization of important resources. All factors that may be relevant to the proposal must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards and flood plain values (in accordance with Executive Order 11988), land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

For activities involving the placement of dredged or fill materials in waters of the United States, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria, a permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials; Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

This notice and all applicable application materials are being forwarded to the appropriate State agencies for review. The Corps will generally not make a final permit decision until the North Carolina Division of Water Quality (NCDWQ) issues, denies, or waives State certification required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice in the NCDWQ Central Office in Raleigh serves as application to the NCDWQ for certification. A waiver will be deemed to occur if the NCDWQ fails to act on this request for certification within sixty days of the date of the receipt of this notice in the NCDWQ Central Office. Additional information regarding the Clean Water Act certification may be reviewed at the NCDWQ Central Office, 401 Oversight and Express Permits Unit, 2321 Crabtree Boulevard, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for certification under Section 401 of the Clean Water Act should do so in writing delivered to the North Carolina Division of Water Quality (NCDWQ), 1650 Mail Service Center, Raleigh, North Carolina 27699-1650 Attention: Ms. Cyndi Karoly by January 10, 2005.

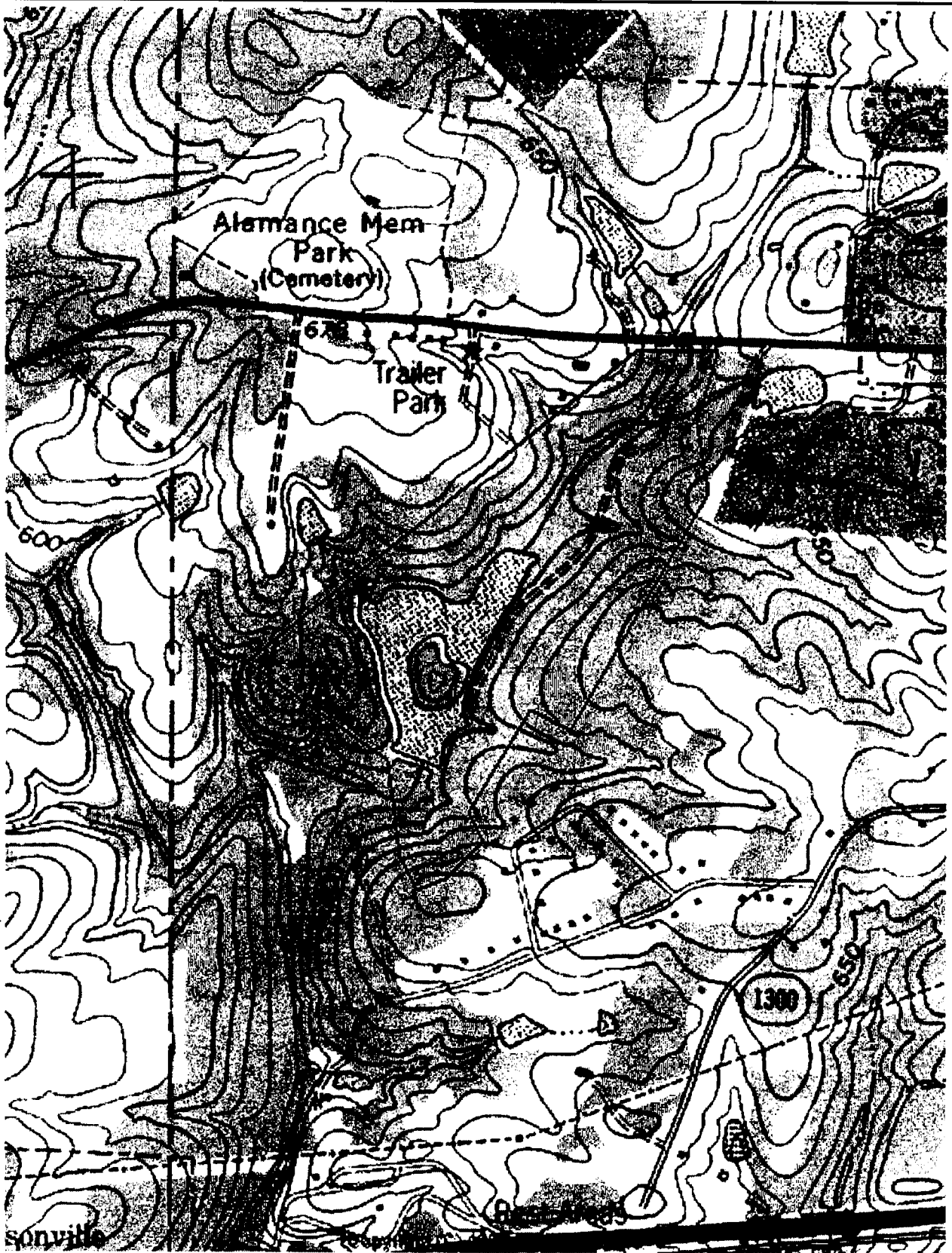
Written comments pertinent to the proposed work, as outlined above, will be received in this office, Attention: Mr. Todd Tugwell, until 4:15 p.m., January 17, 2005, or telephone (919) 876-8441, extension 26.



200420980

Applicant: WMW Development, LLC & Wade Williamson
Burlington, Alamance County, North Carolina

Project Location
Back Creek, Cape Fear
Sheet 1 of 20



200420980

Applicant: WMW Development, LLC & Wade Williamson
Burlington, Alamance County, North Carolina

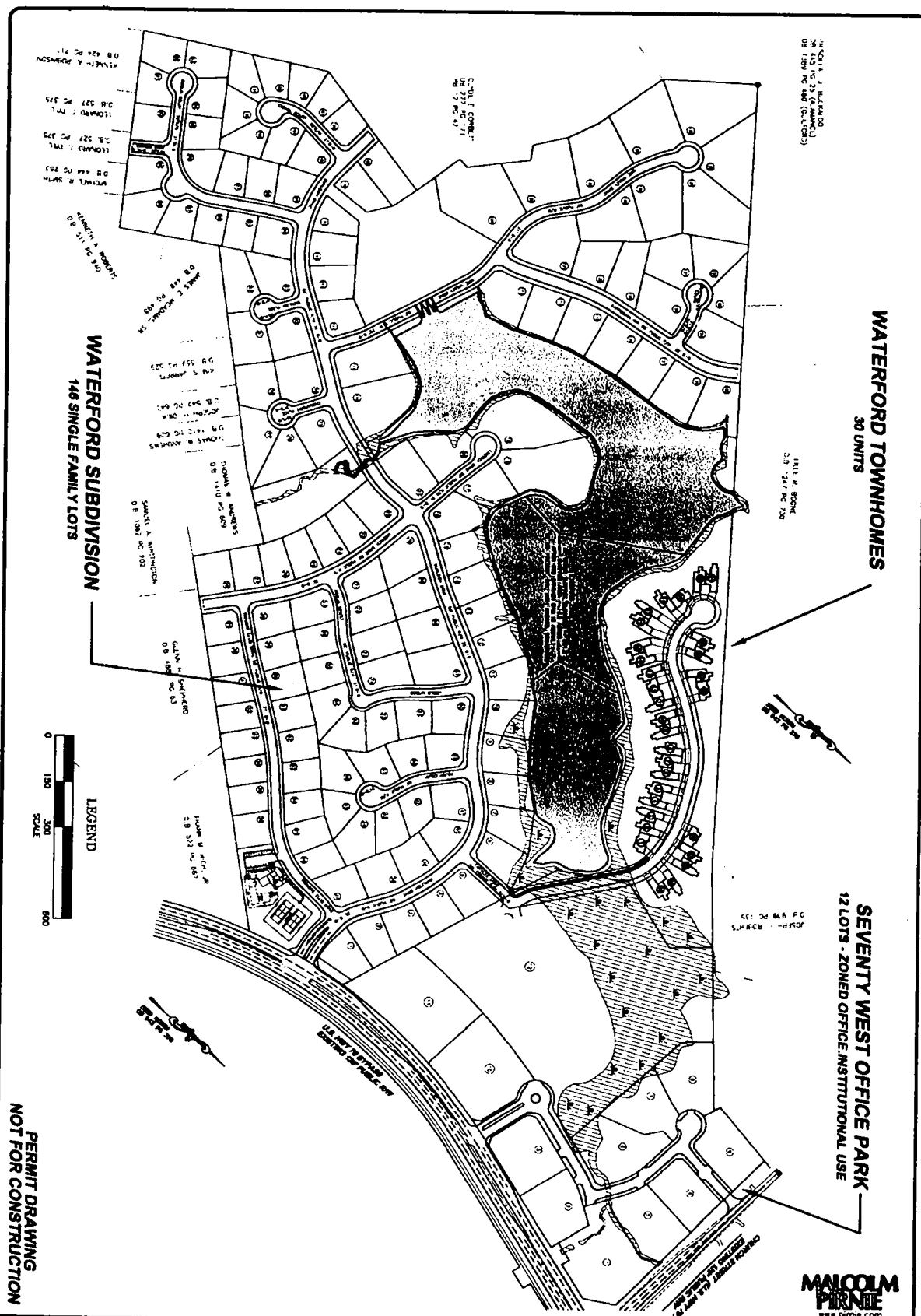
USGS Gibsonville Quad Map
Back Creek, Cape Fear Basin
Sheet 2 of 20

200420980
 Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
 Burlington, Alamance County

Project Overview
 Sheet 3 of 20

PERMIT DRAWING
 NOT FOR CONSTRUCTION



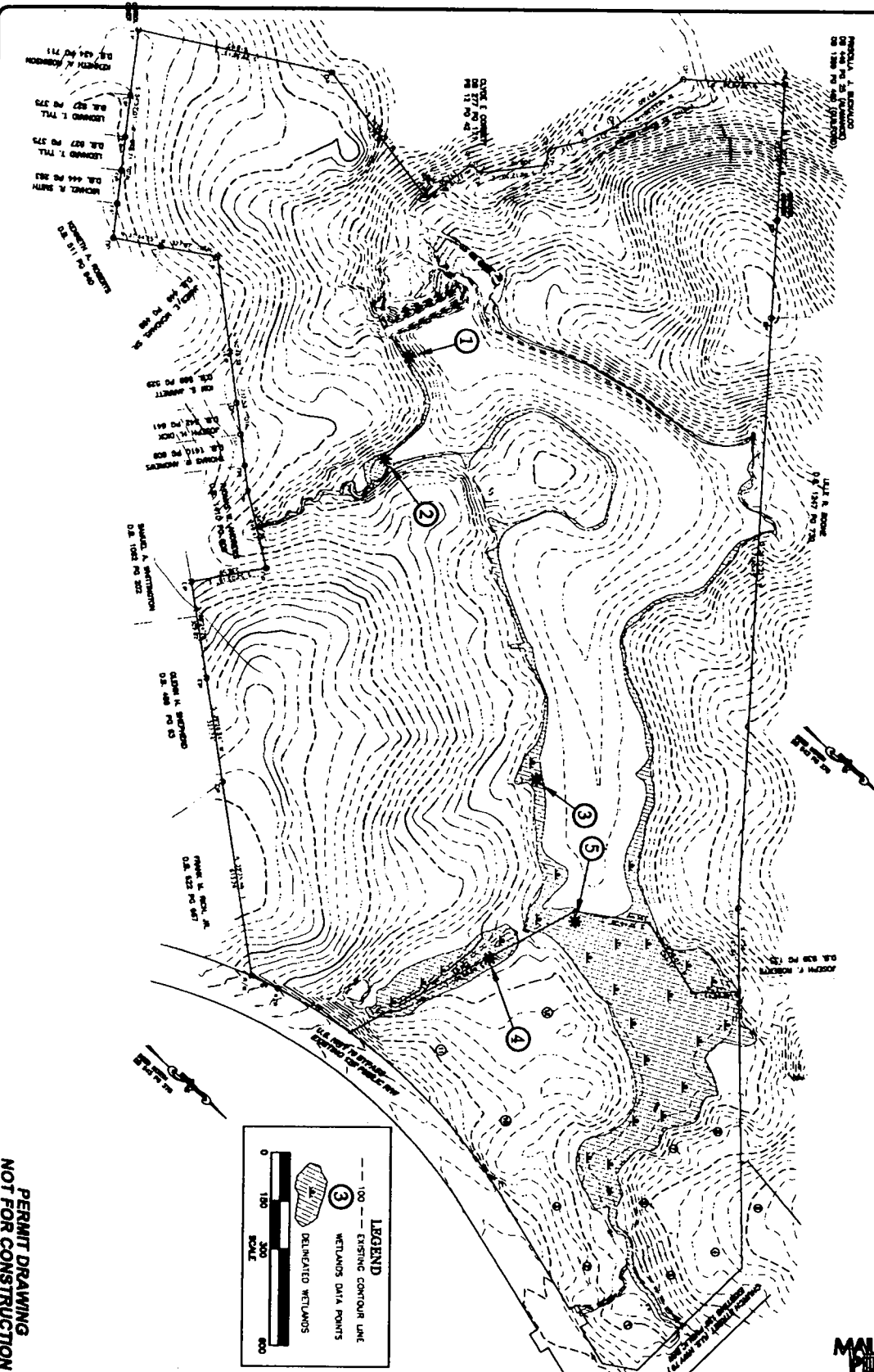
<p>SHEET TITLE WATERFORD RESIDENTIAL SUBDIVISION PROPOSED TOWNHOMES, AND SEVENTY WEST OFFICE PARK.</p> <p>SCALE 1"=300'</p> <p>DATE 07/28/04</p>	<p>PROJECT WATERFORD/SEVENTY WEST</p> <p>WMW OWNERS: WMW Development, LLC 3815 Friendship Patterson Mall Burlington, NC 27215 (336) 227-9374</p> <p>SEVENTY WEST OWNERS: Wade and Linda Williamson 105 Thomas Court Elon, NC 27244 (336) 288-1903</p>	<p>malcolm PERMANENT www.permanent.com</p> <p>michael m. hughes, pe, inc. www.mhpe.com Civil Engineers, Surveyors, and Land Planners 2823 South Church Street Burlington, North Carolina 27215 (336) 584-9980 Office (336) 584-9978 Fax</p>
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200420980
Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
Burlington, Alamance County

Wetland Delineation
Sheet 4 of 20

PERMIT DRAWING
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SHEET TITLE
**SITE TOPOGRAPHY DAM BREACH, WITH
DELINEATED WETLANDS, AND DATA
POINT LOCATIONS**

SCALE DATE
1"=300' 07/28/04

PROJECT
WATERFORD/SEVENTY WEST

WATERFORD OWNERS:
WMW Development, LLC
3815 Friendship Patterson Mall
Burlington, NC 27215
(336) 227-9374

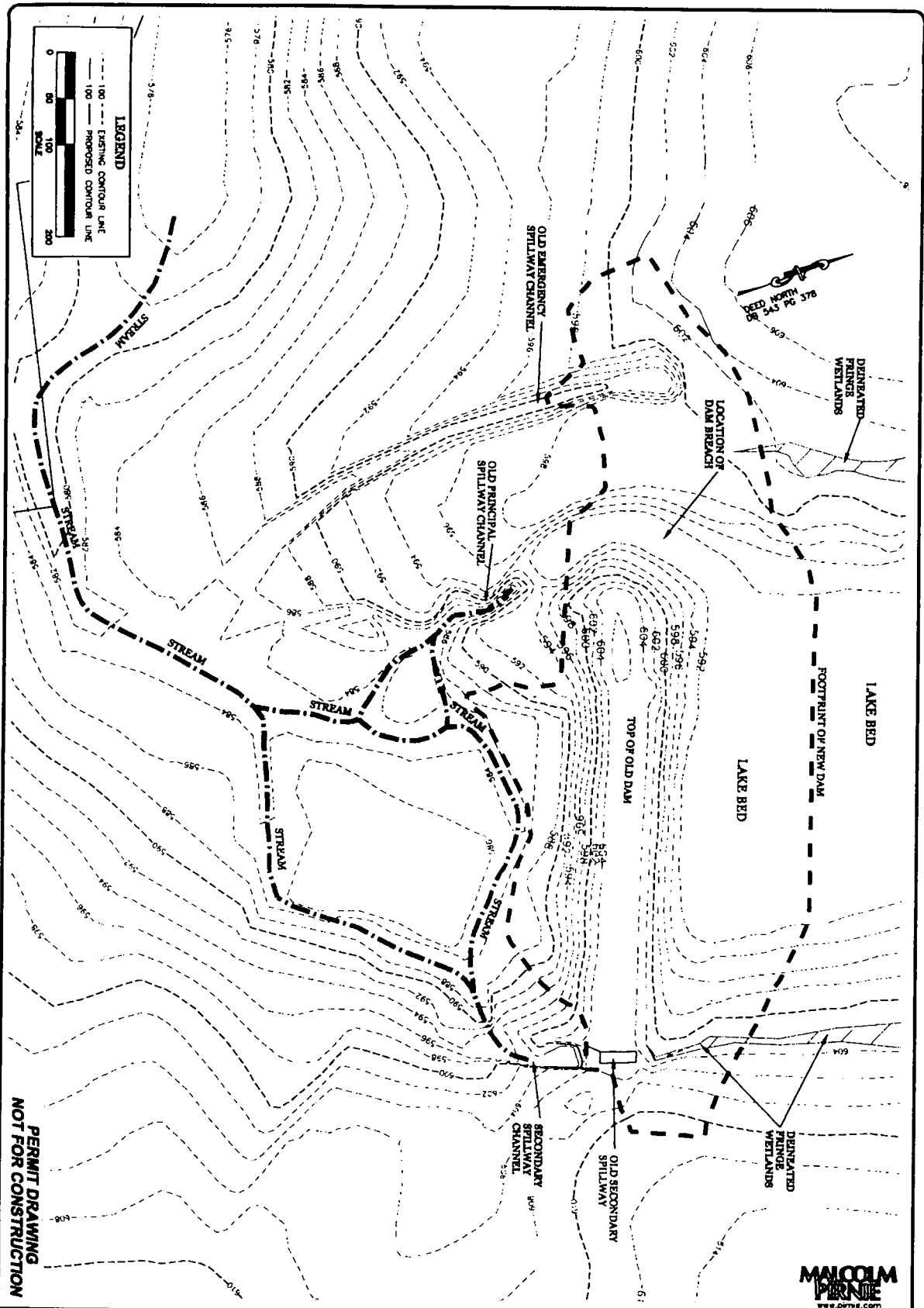
SEVENTY WEST OWNERS:
Wade and Linda Williamson
105 Thomas Court
Dora, NC 27244
(336) 268-1803

malcolm pierce
www.mmpie.com
michael m. hughes, pe, inc.
Civil Engineers, Surveyors, and Land Planners
2823 South Church Street
Burlington, North Carolina 27215
(336) 584-9960 Office
(336) 584-9979 Fax

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 Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
 Burlington, Alamance County

Existing Dam Site
 Sheet 5 of 20



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SHEET TITLE
EXISTING DAM FOLLOWING BREACH
 SCALE 1"=50' DATE 07/28/04

PROJECT
WATERFORD/SEVENTY WEST
 WATERFORD OWNERS:
 WMW Development, LLC
 3815 Friendship Patterson NW
 Burlington, NC 27215
 (336) 227-9374
 SEVENTY WEST OWNERS:
 Wade and Linda Williamson
 105 Thomas Court
 Elm, NC 27244
 (336) 289-1903

malcolm perrine
 www.mphbc.com
michael m. hughes, p.e., inc.
 Civil Engineers, Surveyors, and Land Planners
 2823 South Church Street
 Burlington, North Carolina 27215
 (336) 584-9980 Office
 (336) 584-9979 Fax

Proposed Dam Construction
Sheet 6 of 20



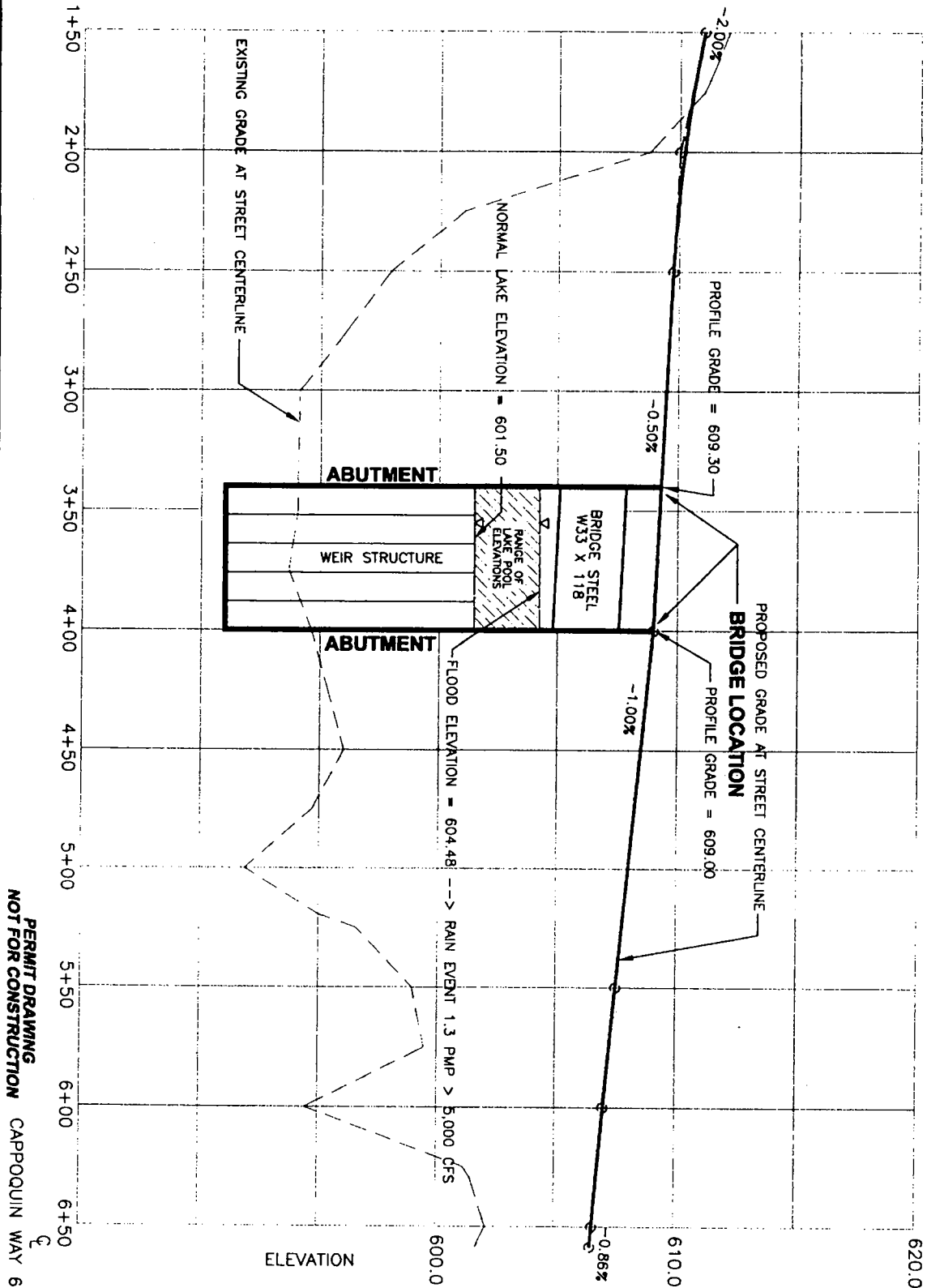
mmh www.mmhinc.com
michael m. hughes, pe, inc.
Civil Engineers, Surveyors, and Land Planners
2823 South Church Street
Burlington, North Carolina 27215
(336) 584-9880 Office
(336) 584-9878 Fax

BATLIFORD OWNERS: WNW Development, LLC 3815 Friendship Patterson Mill Burlington, NC 27215 (336) 227-8374	SEVENTH WEST OWNERS: Wade and Linda Wifflomon 105 Thomas Court Elon, NC 27244 (336) 269-1903
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200420980
Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
Burlington, Alamance County

Proposed Dam Centerline
Sheet 7 of 20



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NOT FOR CONSTRUCTION
CAPPOQUIN WAY 6+58

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PIRNE**
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SHEET TITLE
**PROFILE ALONG PROPOSED
DAM CENTERLINE**
SCALE
1"=40'
DATE
09/09/04

PROJECT
WATERFORD/SEVENTY WEST
WATERFORD OWNERS:
WMW Development, LLC
3815 Friendship Patterson Mill
Burlington, NC 27215
(336) 227-8374
SEVENTY WEST OWNERS:
Wade and Linda Williamson
105 Thomas Court
Elon, NC 27244
(336) 288-1803

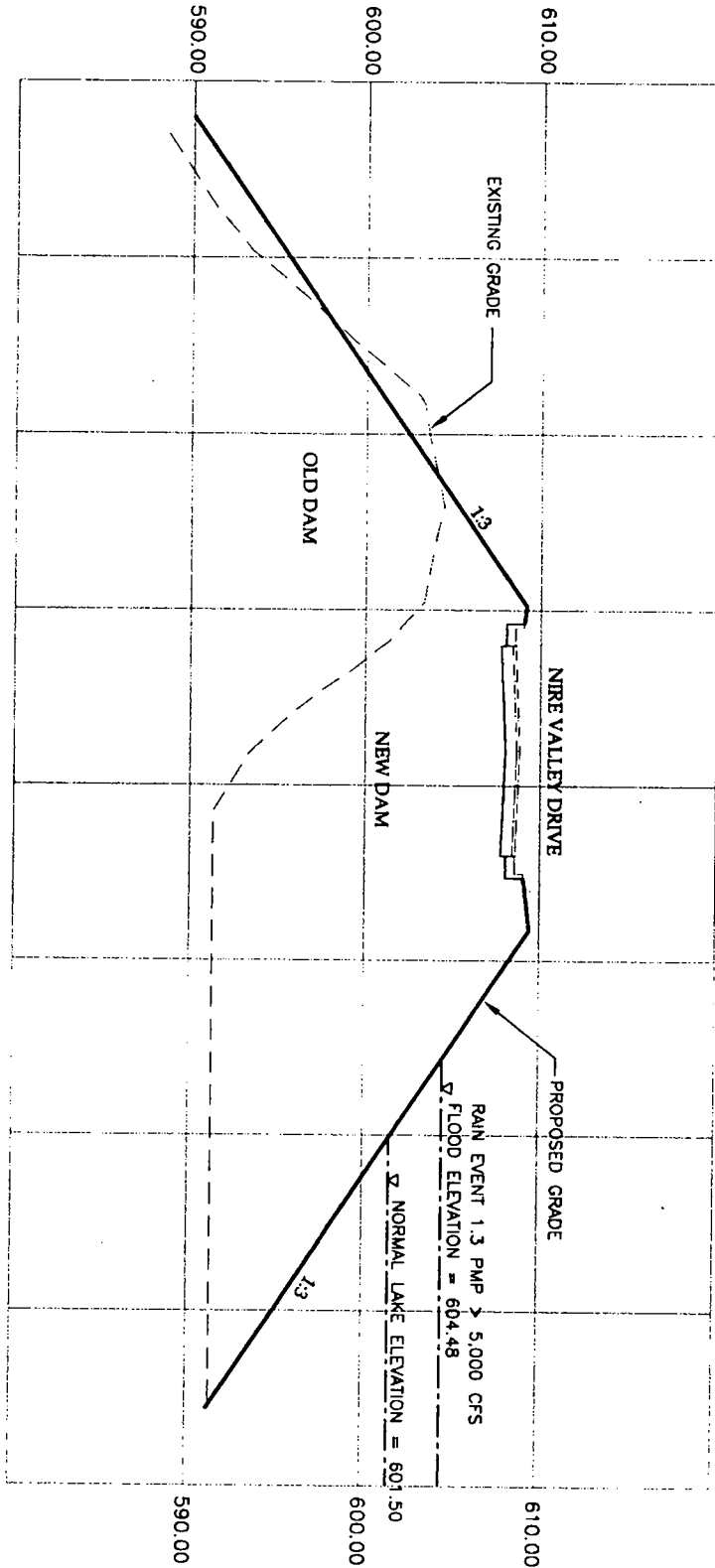
michael m. hughes, pa, inc.
www.mprnc.com
Civil Engineers, Surveyors, and Land Planners
2823 South Church Street
Burlington, North Carolina 27215
(336) 584-9880 Office
(336) 584-9879 Fax

200420980
Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
Burlington, Alamance County

Proposed Dam Cross-Section
Sheet 8 of 20

STA = 3+00
ORIGINAL EL. = 594.21
DESIGN EL. = 609.50
DESIGN EARTHWORK
FILL AREA = 1029.90
CUT AREA = 0.00
VF = 873.08
VC = 0.00



PERMIT DRAWING
NOT FOR CONSTRUCTION

SHEET TITLE
**PROPOSED DAM CROSS-SECTION
AT SECTION A-A IN FIGURE 4-3**
SCALE
Not To Scale
DATE
09/09/04

PROJECT
WATERFORD/SEVENTY WEST

WATERFORD OWNERS:
WMW Development, LLC
3815 Friendship Patterson Mill
Burlington, NC 27215
(336) 227-9374

SEVENTY WEST OWNERS:
Wade and Linda Williamson
105 Thomas Court
Elon, NC 27244
(336) 268-1903

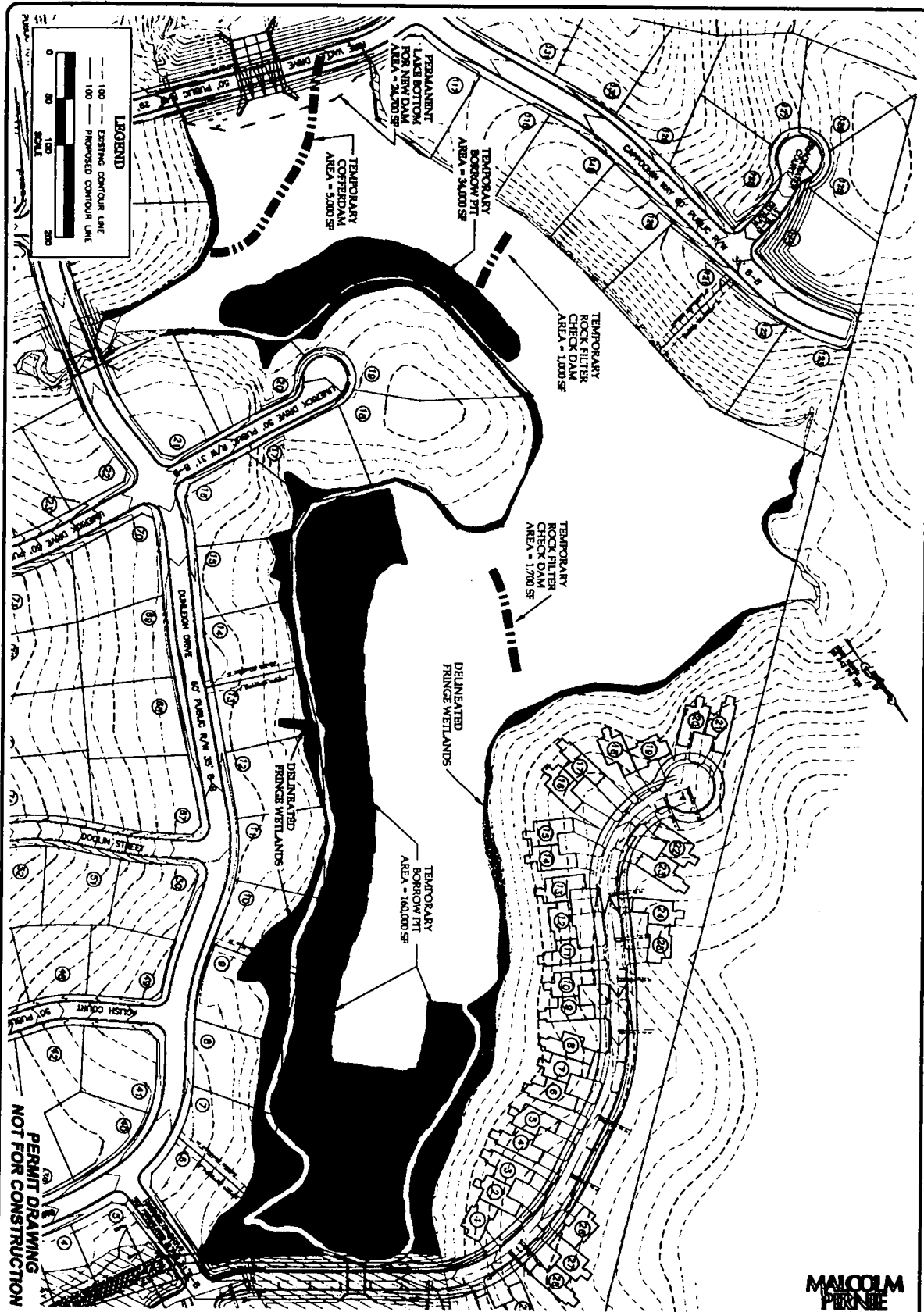
michael m. hughes, pe, inc.
Civil Engineers, Surveyors, and Land Planners
2823 South Church Street
Burlington, North Carolina 27215
(336) 584-9880 Office
(336) 584-9879 Fax

**MALCOLM
PIRRIE**
www.mpipe.com

Applicant: WMW Development, LLC & Wade Williamson

**Back Creek, Cape Fear Basin
Burlington, Alamance County**

Temporary Lakebed Impacts
Sheet 9 of 20



**MALCOLM
PURNIE**
www.purnie.com

FIG. 1
SHEET 1
INDEX TITLE
LAKE BOTTOM IMPACT AREAS

SCALE
1"=150'

DATE
09/09/04

PROJECT
WATERFORD/SEVENTY WEST

WATERFORD OWNERS:
WWW Development, LLC
3815 Friendship Pottersom Mill
Burlington, NC 27215
(336) 227-9374

SEVENTHY WEST OWNERS:
Wade and Linda Williamson
105 Thomas Court
Dor, NC 27244
(336) 299-1903

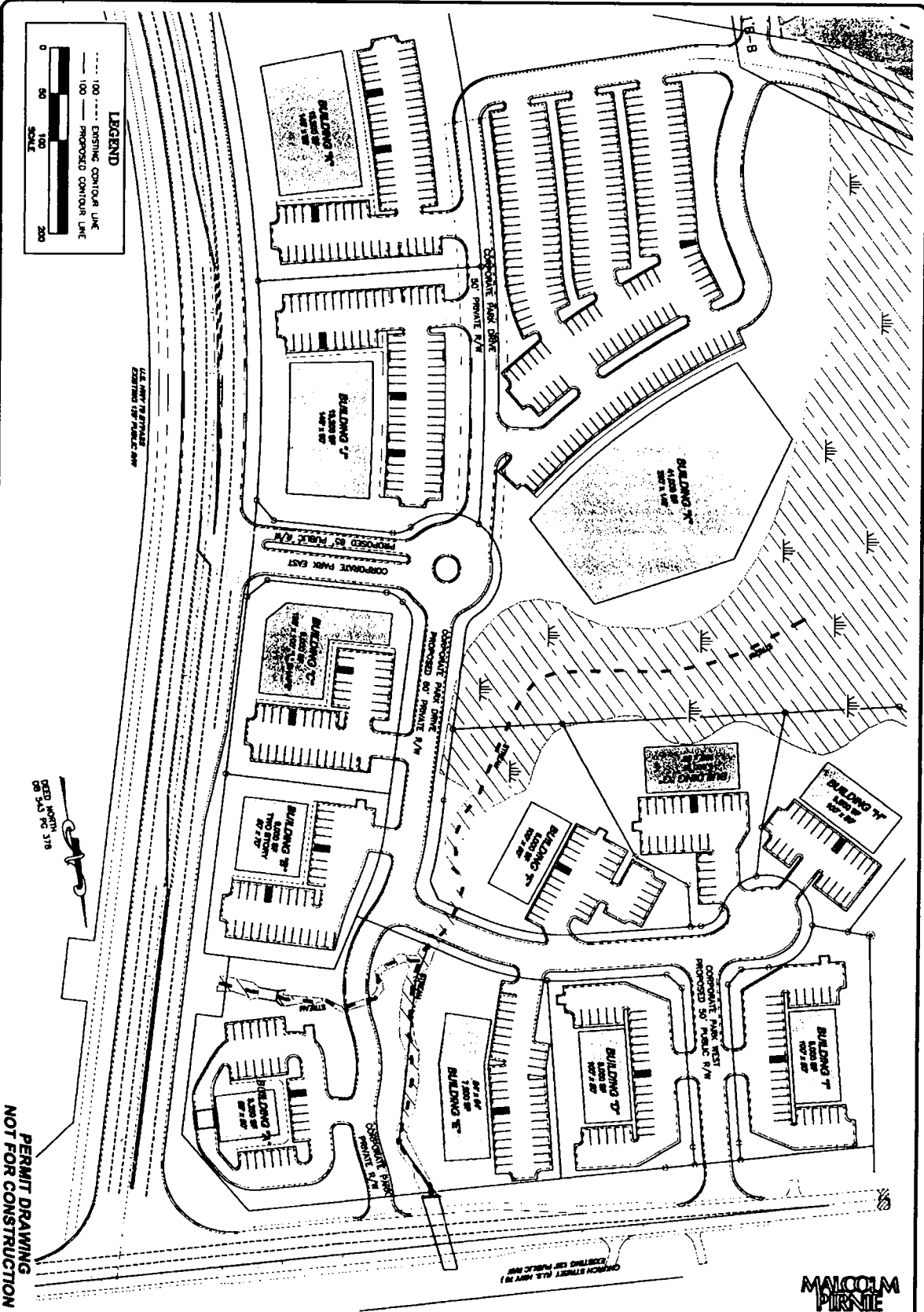
mnh www.mnhce.com
michael m. hughes, pe, inc.
 Civil Engineers, Surveyors, and Land Planners
 2823 South Church Street
 Burlington, North Carolina 27215
 (336) 584-9980 Office
 (336) 584-9979 Fax

200420980

Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
Burlington, Alamance County

Office Park Concept Plan
Sheet 10 of 20

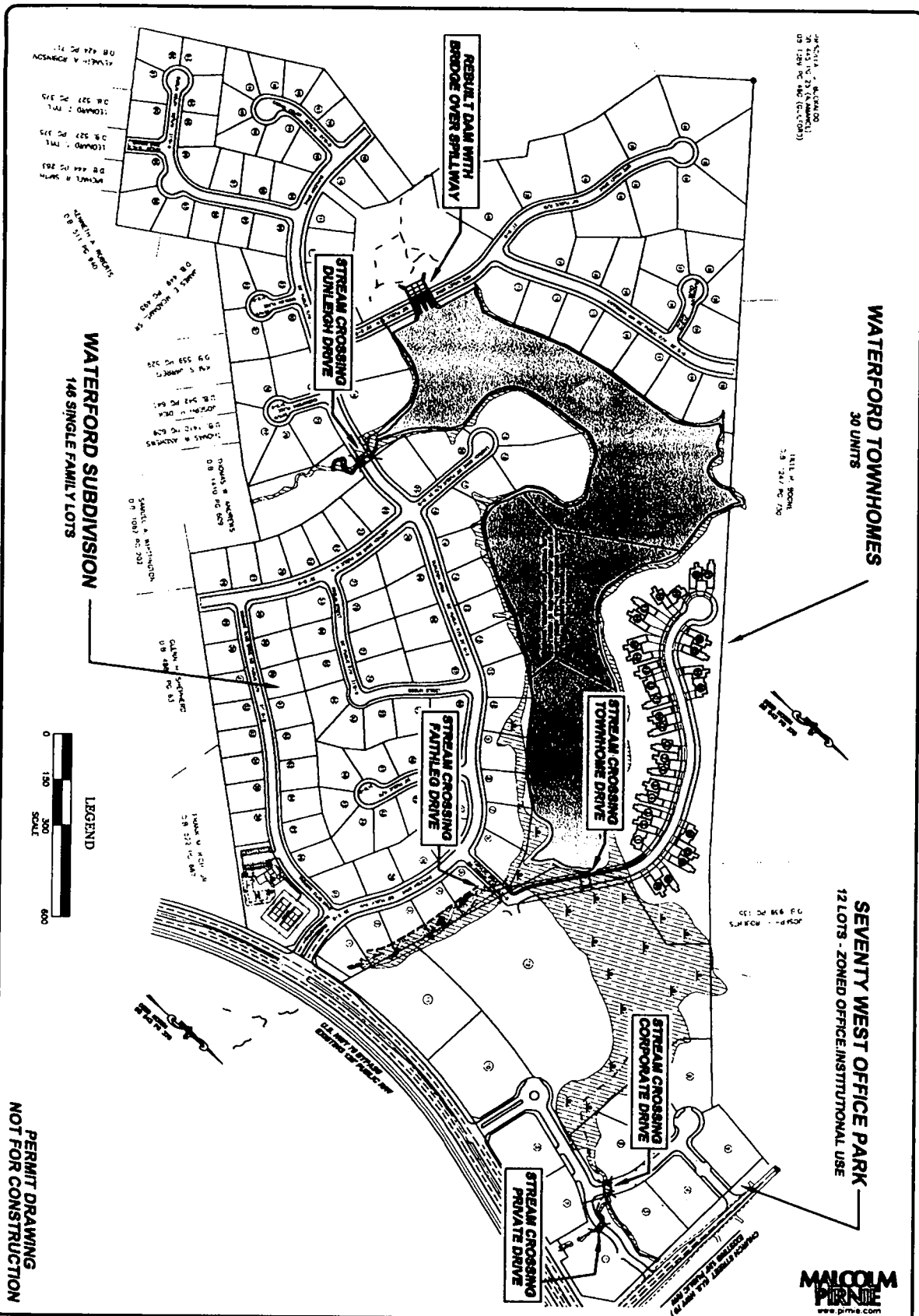


<p>SHEET NO. FIGURE 1-5</p>	<p>SHEET TITLE SEVENTY WEST OFFICE PARK CONCEPT PLAN</p> <p>SCALE 1"=300'</p> <p>DATE 07/28/04</p>	<p>PROJECT WATERFORD/SEVENTY WEST</p> <p>WATERFORD OWNERS: WMW Development, LLC 3815 Friendship Patterson MB Burlington, NC 27215 (336) 227-9374</p> <p>SEVENTY WEST OWNERS: Wade and Linda Williamson 105 Thomas Court Elan, NC 27244 (336) 268-1903</p>	<p>malcolm pirnie www.mhp.com michael m. hughes, pe, inc. Civil Engineers, Surveyors, and Land Planners 2823 South Church Street Burlington, North Carolina 27215 (336) 584-9980 Office (336) 584-9979 Fax</p>
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200420980
 Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
 Burlington, Alamance County

Proposed Stream Crossings
 Sheet 11 of 20



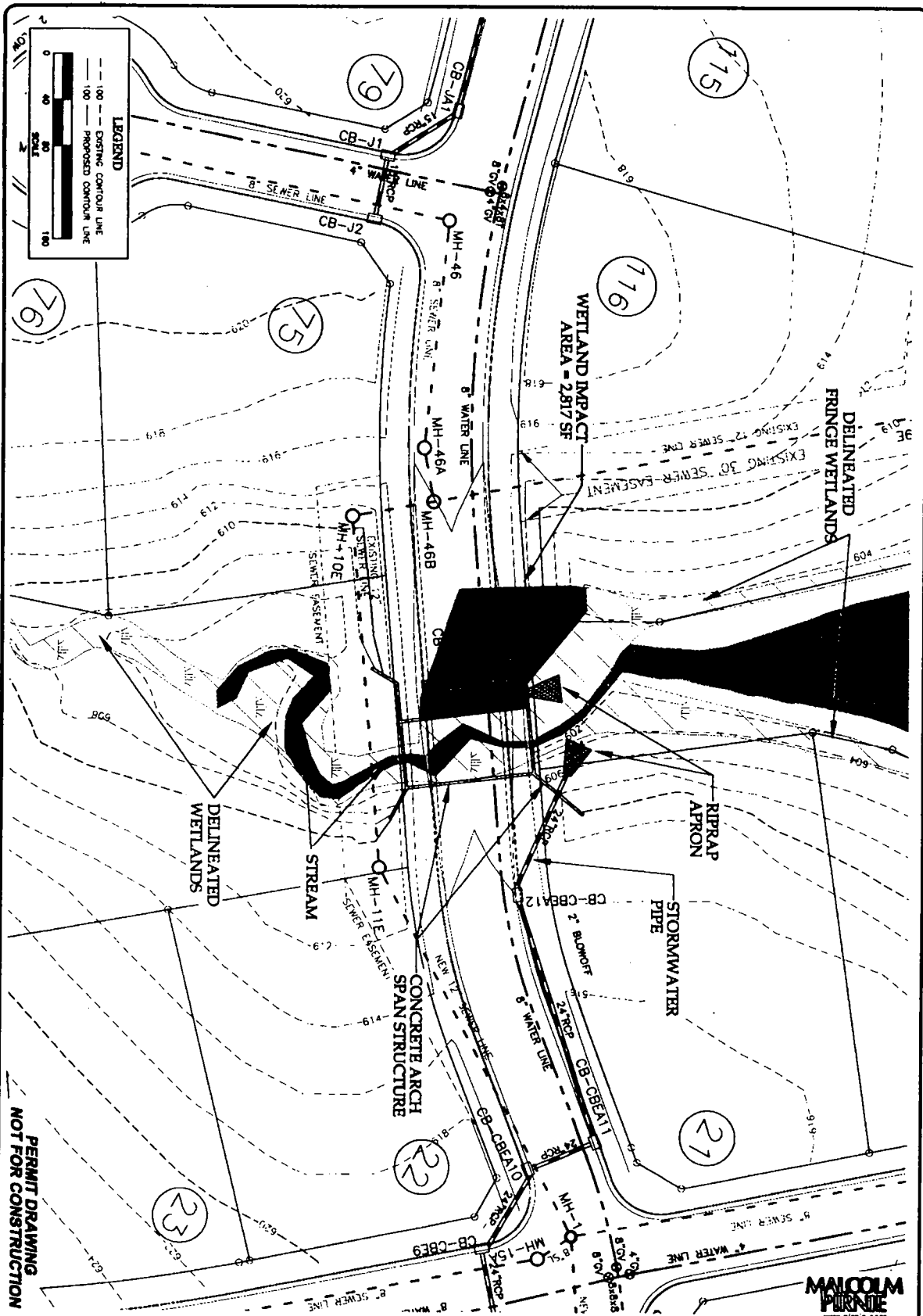
PERMIT DRAWING
 NOT FOR CONSTRUCTION

<p>SHEET TITLE PROPOSED STREAM CROSSINGS</p> <p>SCALE 1"=300'</p> <p>DATE 09/08/04</p> <p>SHEET NO. FIGURE 2-1</p>	<p>PROJECT WATERFORD/SEVENTY WEST</p> <p>WMW DEVELOPMENT OWNERS: WMW Development, LLC 3815 Friendship Patterson Mill Burlington, NC 27215 (336) 227-8374</p> <p>SEVENTY WEST OWNERS: Wade and Linda Williamson 105 Thomas Court Elon, NC 27244 (336) 288-1903</p>	<p>malcolm m. hughes, pe, inc. Civil Engineers, Surveyors, and Land Planners 2823 South Church Street Burlington, North Carolina 27215 (336) 584-9980 Office (336) 584-9878 Fax</p>
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200420980
Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
Burlington, Alamance County

Dunleigh Dr. Crossing
Sheet 12 of 20

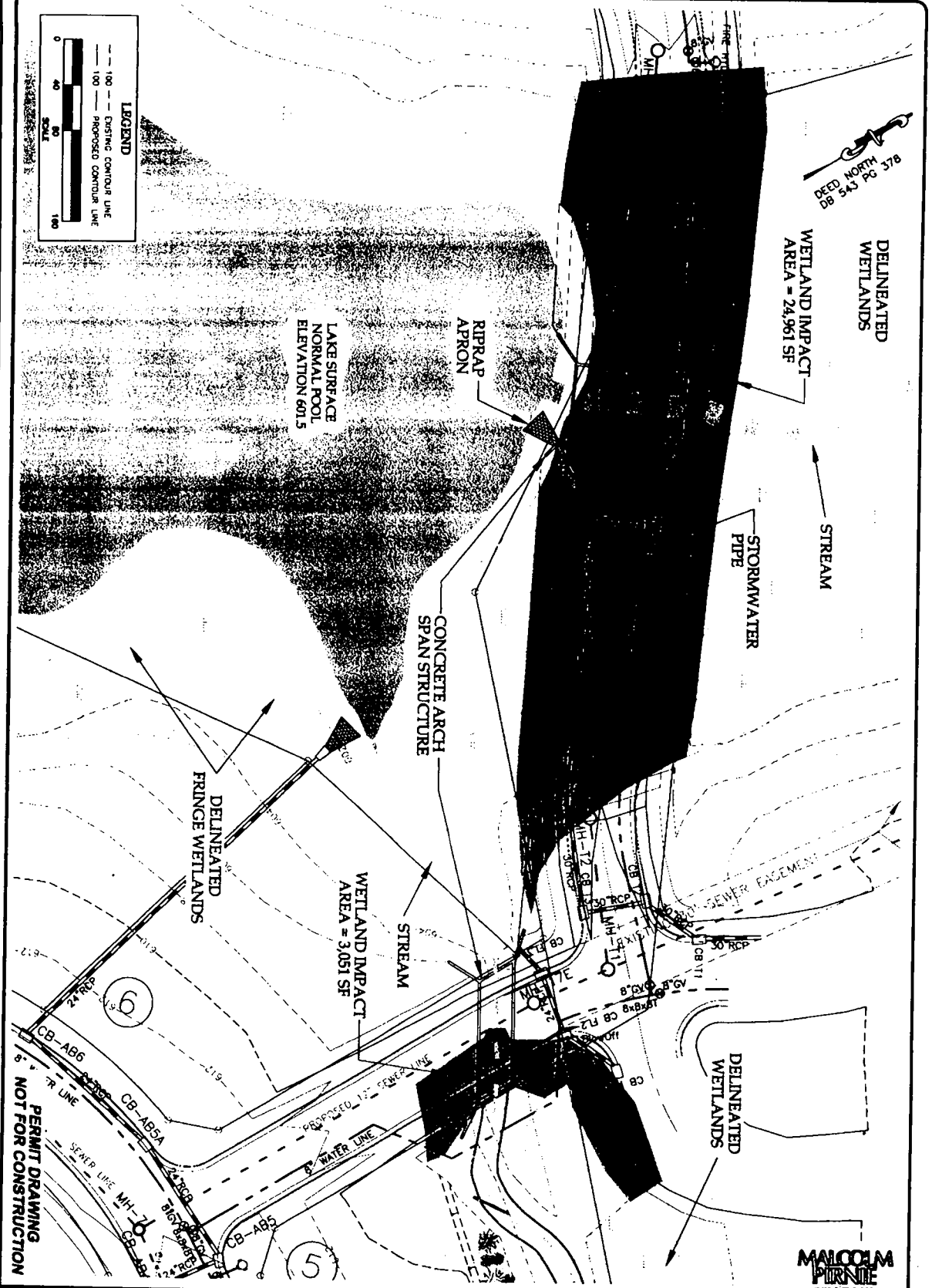


<p>SHEET NO. FIGURE 4-8</p>	<p>SHEET TITLE PROPOSED STREAM CROSSING ON ON DUNLEIGH DRIVE</p> <p>SCALE 1"=40'</p> <p>DATE 09/09/04</p>	<p>PROJECT WATERFORD/SEVENTY WEST</p> <p>WATERFORD OWNERS: WMW Development, LLC 3815 Friendship Patterson Mill Burlington, NC 27215 (336) 227-9374</p> <p>SEVENTY WEST OWNERS: Wade and Linda Williamson 105 Thrane Court Elon, NC 27244 (336) 288-1903</p>	<p>malcolm PIRNE www.mpm.com</p> <p>michael m. hughes, ps, inc. Civil Engineers, Surveyors, and Land Planners 2823 South Church Street Burlington, North Carolina 27215 (336) 584-9980 Office (336) 584-9979 Fax</p>
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200420980
 Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
 Burlington, Alamance County

Faithleg & Townhome Dr. Crossings
 Sheet 13 of 20



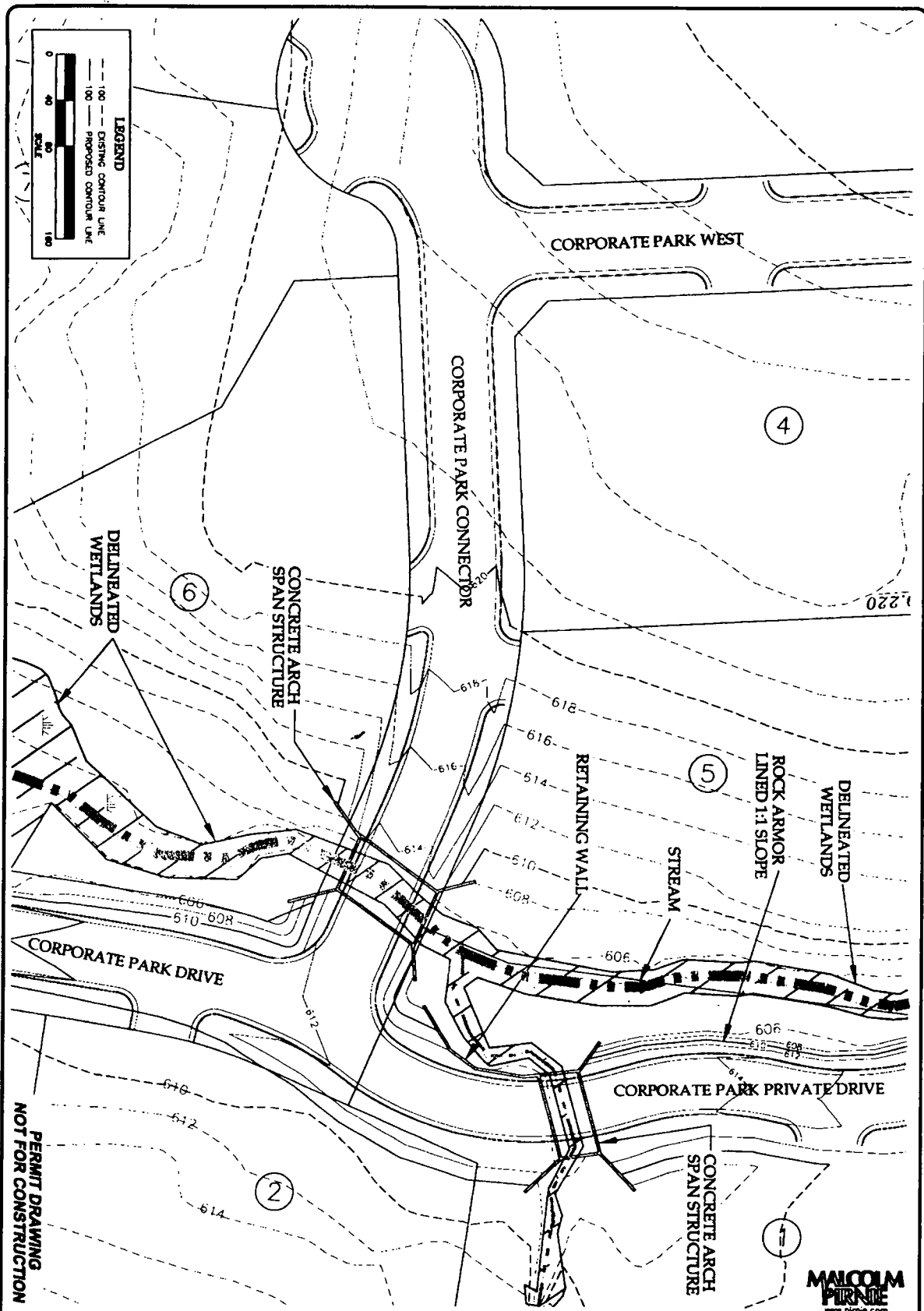
<p>SHEET TITLE PROPOSED STREAM CROSSINGS FOR FAITHLEG DRIVE AND TOWNHOME DRIVE</p> <p>SCALE 1"=40'</p> <p>DATE 09/09/04</p> <p>FIGURE 4-10</p>	<p>PROJECT WATERFORD/SEVENTY WEST</p> <p>WATERFORD OWNERS: WMW Development, LLC 3815 Friendship Patterson Mill Burlington, NC 27215 (336) 227-8374</p> <p>SEVENTY WEST OWNERS: Wade and Linda Williamson 105 Thomas Court Eden, NC 27244 (336) 289-1903</p>	<p>malcolm pirnie www.pirnie.com</p> <p>michael m. hughes, pe, inc. Civil Engineers, Surveyors, and Land Planners 2823 South Church Street Burlington, North Carolina 27215 (336) 584-9980 Office (336) 584-9979 Fax</p>
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200420980

Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
Burlington, Alamance County

Corporate Center Crossings
Sheet 14 of 20



SHEET TITLE
**PROPOSED STREAM CROSSINGS FOR
CORPORATE PARK DRIVE AND
CORPORATE PRIVATE DRIVE**
FIGURE 4-13

SCALE
1"=40'
DATE
09/09/04

PROJECT
WATERFORD/SEVENTY WEST

WATERFORD OWNERS:
WMW Development, LLC
3815 Friendship Patterson Way
Burlington, NC 27215
(336) 227-9374

SEVENTY WEST OWNERS:
Wade and Linda Williamson
105 Thomas Court
Elon, NC 27244
(336) 288-1903

michael m. hughes, pe, inc.
Civil Engineers, Surveyors, and Land Planners
2823 South Church Street
Burlington, North Carolina 27215
(336) 584-9980 Office
(336) 584-9979 Fax

200420980

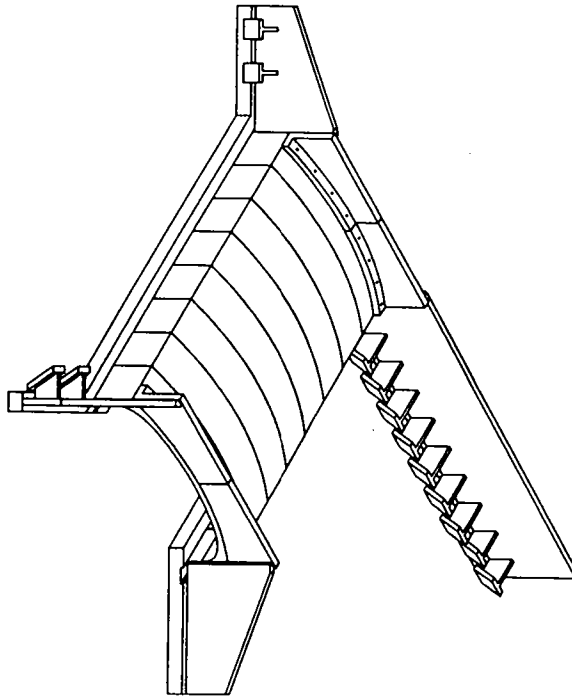
Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
Burlington, Alamance County

Typical Open Bottom Culvert
Sheet 15 of 20

No. of Chords	1
Length per Cord	48'-0" (14.630 m)
Span	28'-0" (8.534 m)
Rise	8'-0" (2.438 m)
Width of Arch	11'-0" (3.353 m)

Height above unit at crown	Upstream	Downstream
Thickness	1'-0" (0.305 m)	1'-0" (0.305 m)
Attached	NO	NO



	WM #1	WM #2	WM #3	WM #4
Length	16'-0" (5.079 m)	50'-0" (15.240 m)	16'-0" (5.079 m)	16'-0" (5.079 m)
Wingwall Angle	4.5°	90°	4.5°	4.5°
Height	12'-9" (3.886 m)	12'-9" (3.886 m)	12'-9" (3.886 m)	12'-9" (3.886 m)
End Height	6'-0" (1.829 m)	11'-0" (3.605 m)	6'-0" (1.829 m)	6'-0" (1.829 m)
Full Length	11'-0" (3.353 m)	11'-0" (3.353 m)	11'-0" (3.353 m)	11'-0" (3.353 m)

<p>CS 1/1</p>		<p>Burlington</p>	<p>NC</p>
<p>Dunleigh Drive</p>		<p>Designed by: Region Manager Dull, PE</p>	
<p>Date: 08/15/2004</p>	<p>App No: 4717</p>	<p>Sheet No.</p>	

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SHEET TITLE
**TYPICAL CONCRETE ARCH SPAN FOR
STREAM CROSSINGS - ISOMETRIC VIEW**

SCALE
Not to Scale

DATE
09/08/04

PROJECT
WATERFORD/SEVENTY WEST

WATERFORD OWNERS:
WMW Development, LLC
3815 Friendship Patterson Mill
Burlington, NC 27215
(336) 227-9374

SEVENTY WEST OWNERS:
Wade and Linda Williamson
105 Thomas Court
Elon, NC 27244
(336) 269-1903

**malcolm
pierre**
www.mpmpe.com

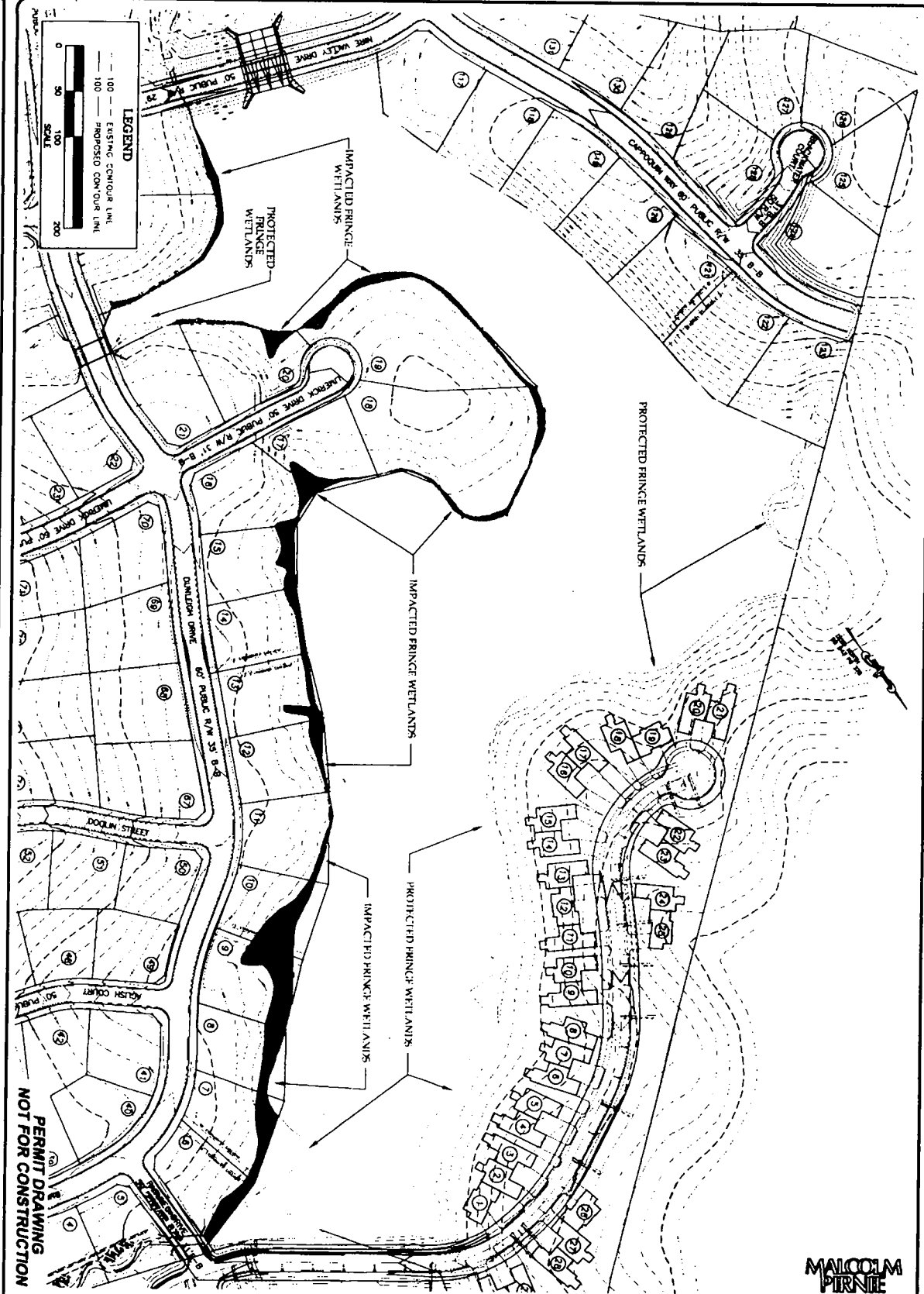
michael m. hughes, pe, inc.
Civil Engineers, Surveyors, and Land Planners
2823 South Church Street
Burlington, North Carolina 27215
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(336) 584-9979 Fax

200420980

Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
Burlington, Alamance County

Lake Fringe Wetland Impacts
Sheet 16 of 20



PERMIT DRAWING
NOT FOR CONSTRUCTION

**MALCOLM
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<p>SHEET NO. FIGURE 4-17</p>	<p>SHEET TITLE WETLAND IMPACTS IN THE FRINGE OF THE LAKE</p> <p>SCALE 1"=150'</p> <p>DATE 09/09/04</p>	<p>PROJECT WATERFORD/SEVENTY WEST</p> <p>WATERFORD OWNERS: WMW Development, LLC 3815 Friendship Patterson Mill Burlington, NC 27215 (336) 227-9374</p> <p>SEVENTY WEST OWNERS: Wade and Linda Williamson 105 Thomas Court Dor, NC 27244 (336) 268-1903</p>	<p>michael m. hughes, pe, inc. Civil Engineers, Surveyors, and Land Planners 2823 South Church Street Burlington, North Carolina 27215 (336) 584-9980 Office (336) 584-9979 Fax</p>
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200420980
Applicant: WMW Development, LLC & Wade Williamson

Back Creek, Cape Fear Basin
Burlington, Alamance County

Proposed Wetland Impacts, Lots 1-5
Sheet 17 of 20

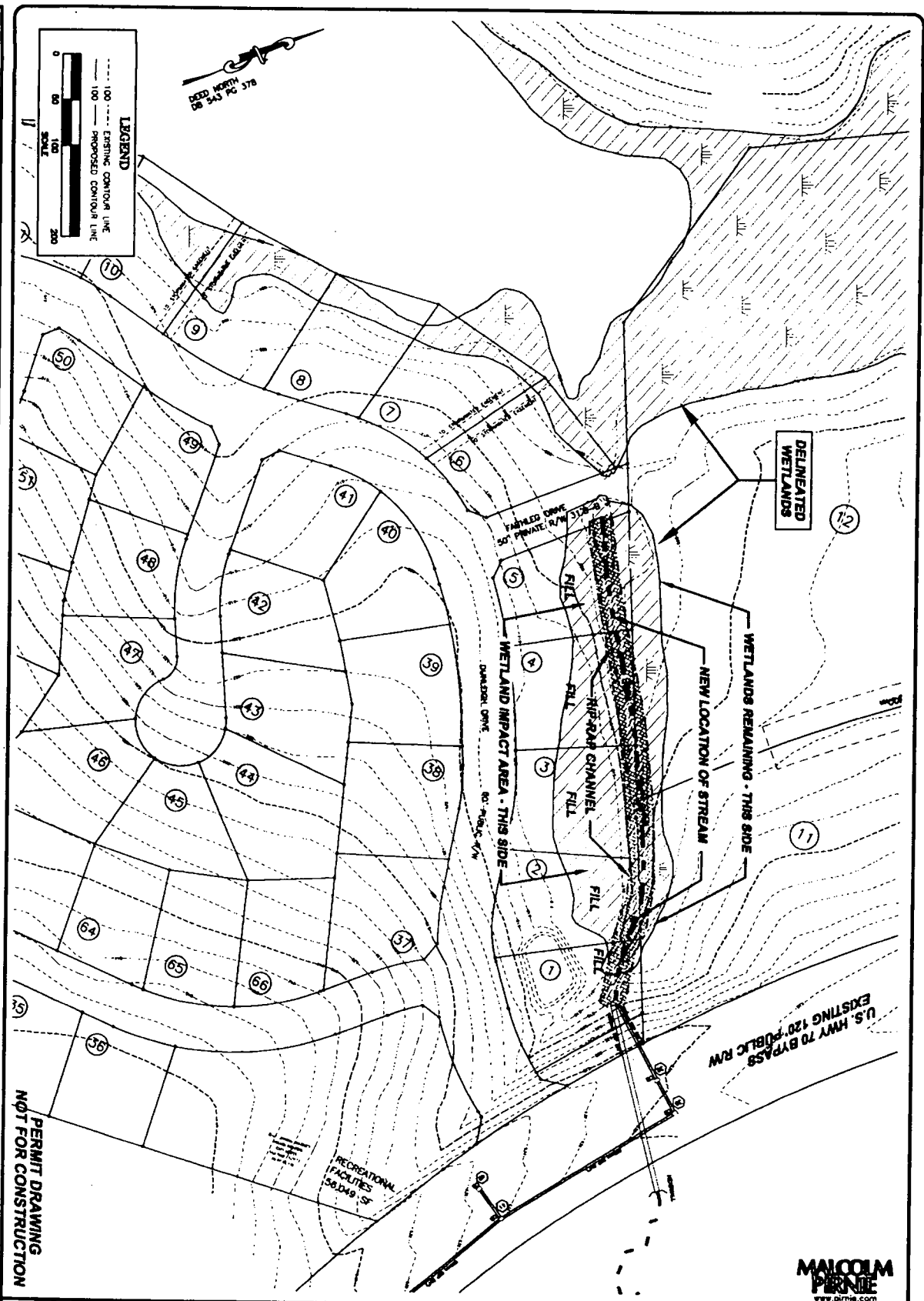


FIGURE 4-16

SHEET TITLE
SUBSEQUENT TO IMPACT
WETLAND AND STREAM IMPACT AREA
IN THE VICINITY OF LOTS 1-5

SCALE
1"=300'

PROJECT
WATERFORD/SEVENTY WEST

WATERFORD OWNERS:
WMW Development, LLC
3815 Friendship Patterson Mill
Burlington, NC 27215
(336) 227-8374

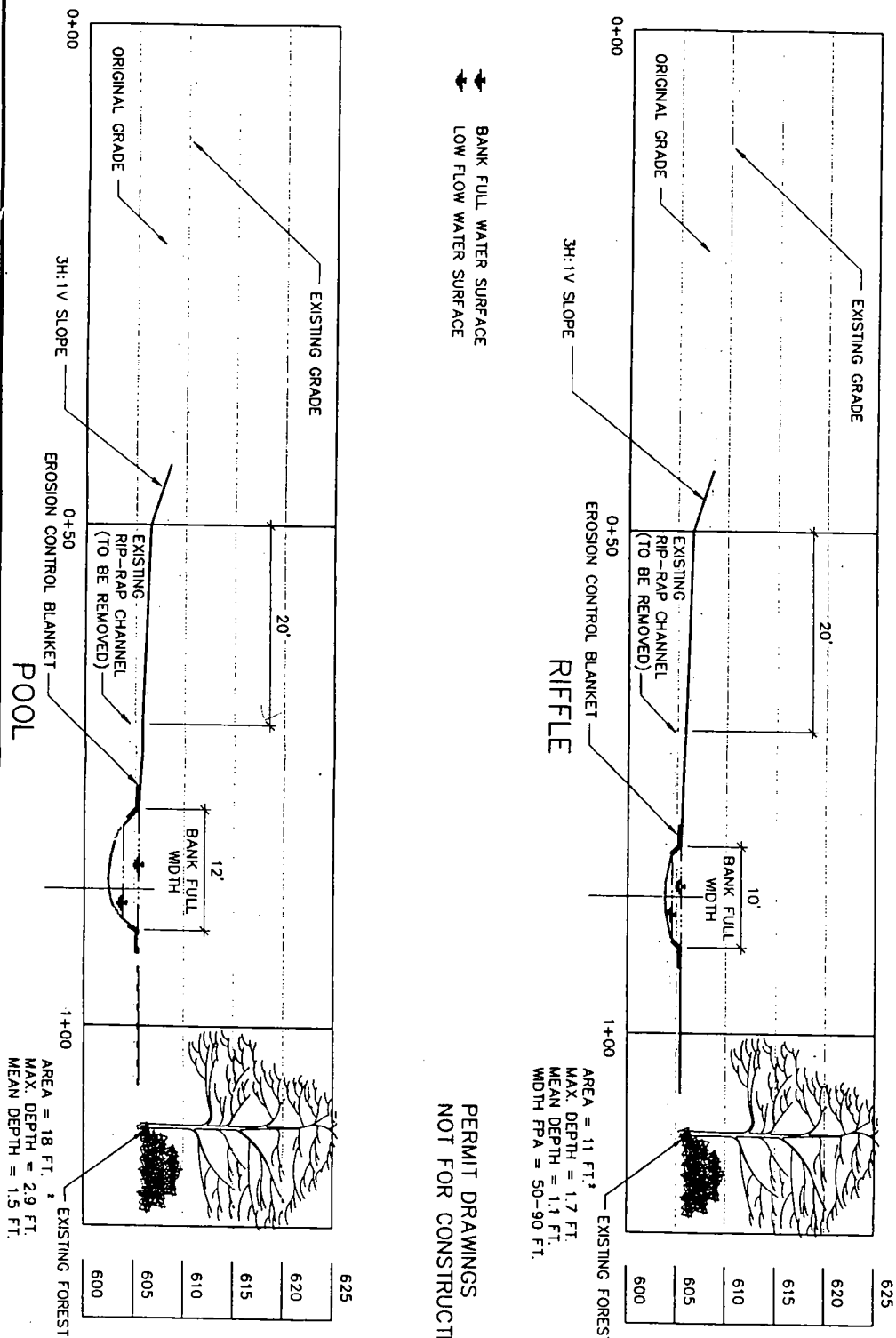
SEVDNY WEST OWNERS:
Wade and Linda Williamson
105 Thomas Court
Elon, NC 27244
(336) 268-1803

malcolm pirnie
www.mprpe.com
michael m. hughes, pe, inc.
Civil Engineers, Surveyors, and Land Planners
2823 South Church Street
Burlington, North Carolina 27215
(336) 584-9880 Office
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Stream Restoration Cross-Section
Sheet 19 of 20



→ BANK FULL WATER SURFACE
→ LOW FLOW WATER SURFACE

PERMIT DRAWINGS
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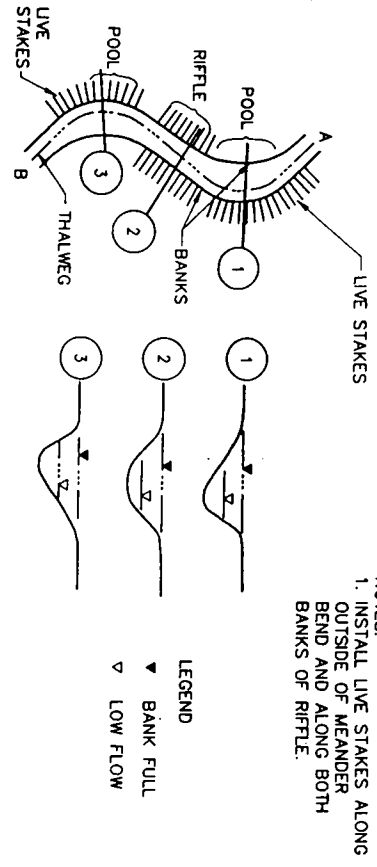
mmdh www.mmdh.com
michael m. hughes, pe, inc.
Civil Engineers, Surveyors, and Land Planners
2823 South Church Street
Burlington, North Carolina 27215
(336) 584-9980 Office
(336) 584-9979 Fax

PROJECT
WATERFORD PROJECT
OWNER
WMW DEVELOPMENT, INC.
3815 FRIENDSHIP PATTERSON MILL RD
BURLINGTON, NC 27215

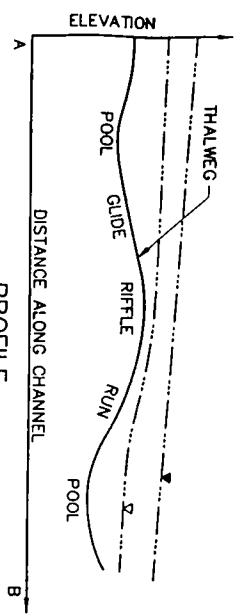
REVISIONS
PERMIT DRAWINGS
NOT FOR CONSTRUCTION

SHEET TITLE
PROPOSED STREAM RESTORATION CROSS-SECTIONS
SCALE
1"=10'
DATE
08/20/04

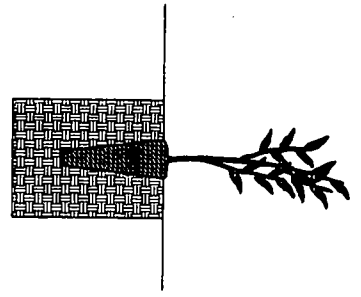
SHEET NO.
FIGURE 6-2



NOTES:
1. INSTALL LIVE STAKES ALONG OUTSIDE OF MEANDER BEND AND ALONG BOTH BANKS OF RIFFLE.

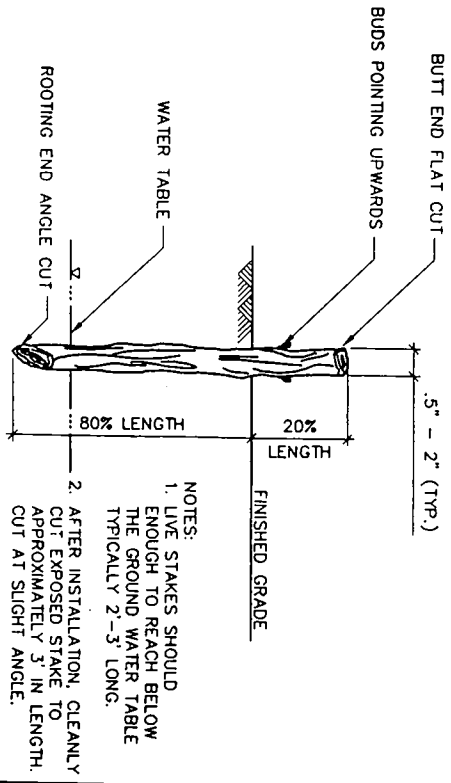
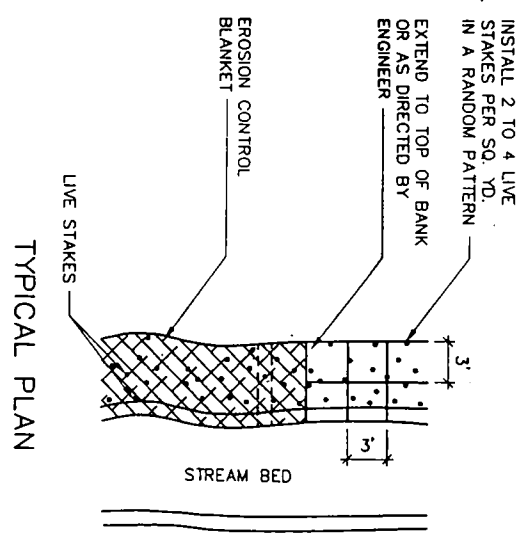


TYPICAL RECONSTRUCTED MEANDER DETAIL



TREE SHRUB PLANTING DETAIL

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DORMANT LIVE STAKE DETAIL

NOTES:
1. LIVE STAKES SHOULD BE ENOUGH TO REACH BELOW THE GROUND WATER TABLE TYPICALLY 2'-3' LONG.
2. AFTER INSTALLATION, CLEANLY CUT EXPOSED STAKE TO APPROXIMATELY 3' IN LENGTH. CUT AT SLIGHT ANGLE.

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Back Creek, Cape Fear Basin
Burlington, Alamance County

Stream Restoration Detail
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PROJECT
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OWNER
WMW DEVELOPMENT, INC.
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BURLINGTON, NC 27215

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PERMIT DRAWINGS
NOT FOR CONSTRUCTION

SHEET TITLE
PROPOSED STREAM RESTORATION DETAILS
SCALE
NOT TO SCALE
DATE
08/20/04

SHEET NO.
FIGURE 6-3